

Claims

1 1. A method for increasing the blood levels of secretable
2 therapeutic proteins in mammals, the method comprising: introducing a
3 formulation into a target cell, the formulation comprising a DNA construct not
4 packaged in a viral particle, wherein the construct encodes a functionally active
5 protein polypeptide that mediates increasing the protein levels in the
6 bloodstream.

1 2. The method of claim 1, wherein said introducing is by oral
2 administration.

1 3. The method of claim 1, wherein functionally active protein is
2 delivered to the bloodstream for a period of from about two to four days.

1 4. The method of claim 1, wherein the target cell is a
2 gastrointestinal cell other than an intestinal stem cell.

1 5. The method of claim 5, wherein the gastrointestinal cell is
2 within the small intestine.

1 6. The method of claim 5, wherein the gastrointestinal cell is a cell
2 within the large intestine.

1 7. The method of claim 1, wherein said introducing is by
2 parenteral administration.